



# Upgrade Jail Campus Infrastructure Board Presentation

August 9, 2016

**MOSS**

**CGL RICCI GREENE**



# Project Success Criteria

*Enhanced campus and public safety*

*Consolidated support services* (food service, laundry, security, warehouse)

*Operational efficiencies* – staffing and utilities

- Centralized laundry, better flow, less water more energy efficient
- Food service delivery improvements to supply and distribution
- Sheriff purchasing on campus
- Reduced utility operation costs campus wide (cogeneration and equipment upgrades)

*Investment in future*

- Replacement of aging facilities and upgrade of central utilities campus wide
- Planned accommodations for expansion and future needs (chilled water, power, warehouse)

*Increased resiliency* – food service, chilled water, power, security

# DESIGN PHASE SUMMARY



What have we been doing?

## DESIGN PHASE MILESTONES

- Programming
- Schematics
- Design Development
- 50% Construction Documents

## SUPPORTING ACTIVITIES

- 240 meetings
- Over 40 formal site visits
- Budget updates
- Phasing plans
- Schedule development
- Budget confirmation

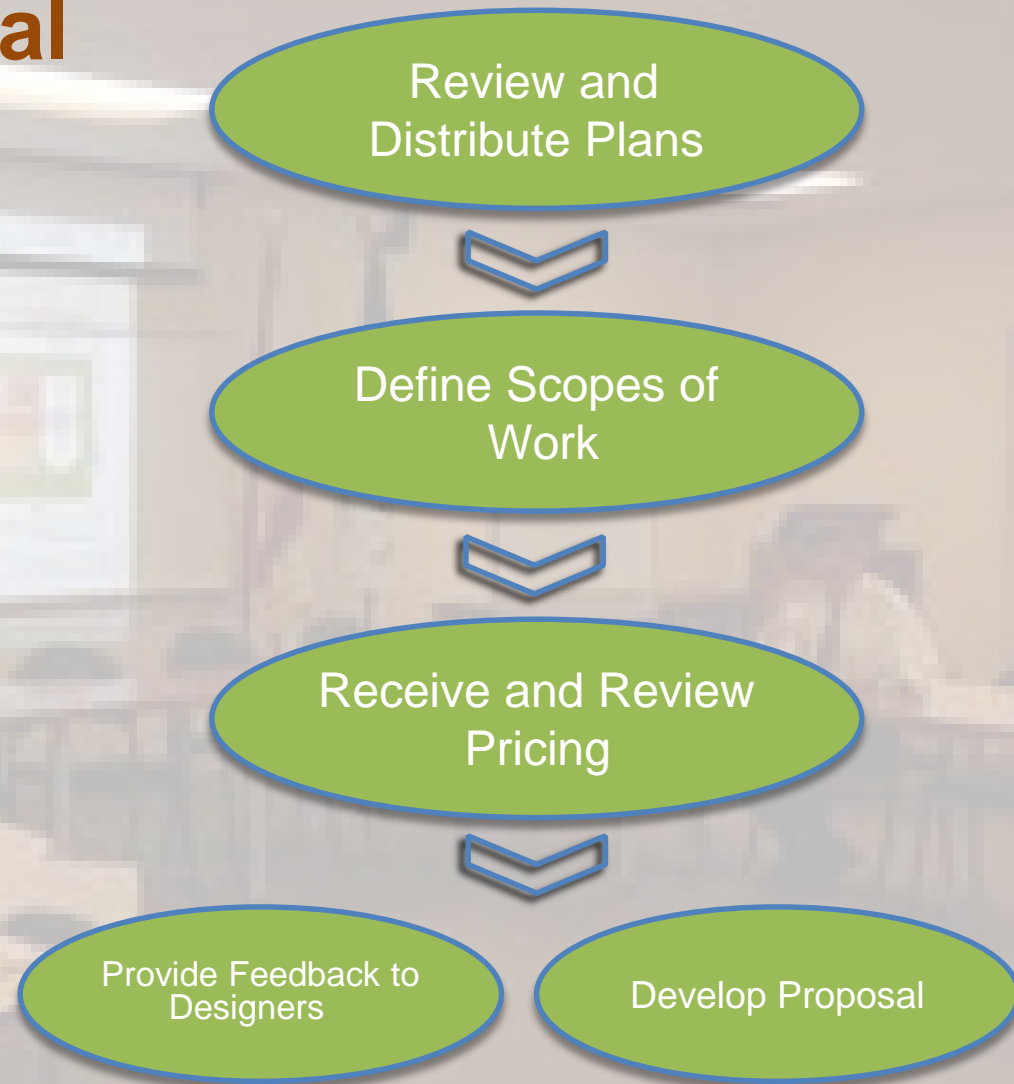


What have we been doing?

# Budget Confirmation and Preparing the Lump Sum Proposal

## Bid Solicitation

- 30 bid packages
- 310 contractors invited
- 283 responded to invitation
- 136 confirmed they would bid
- 115 bids received



What have we been doing?

# OVERVIEW



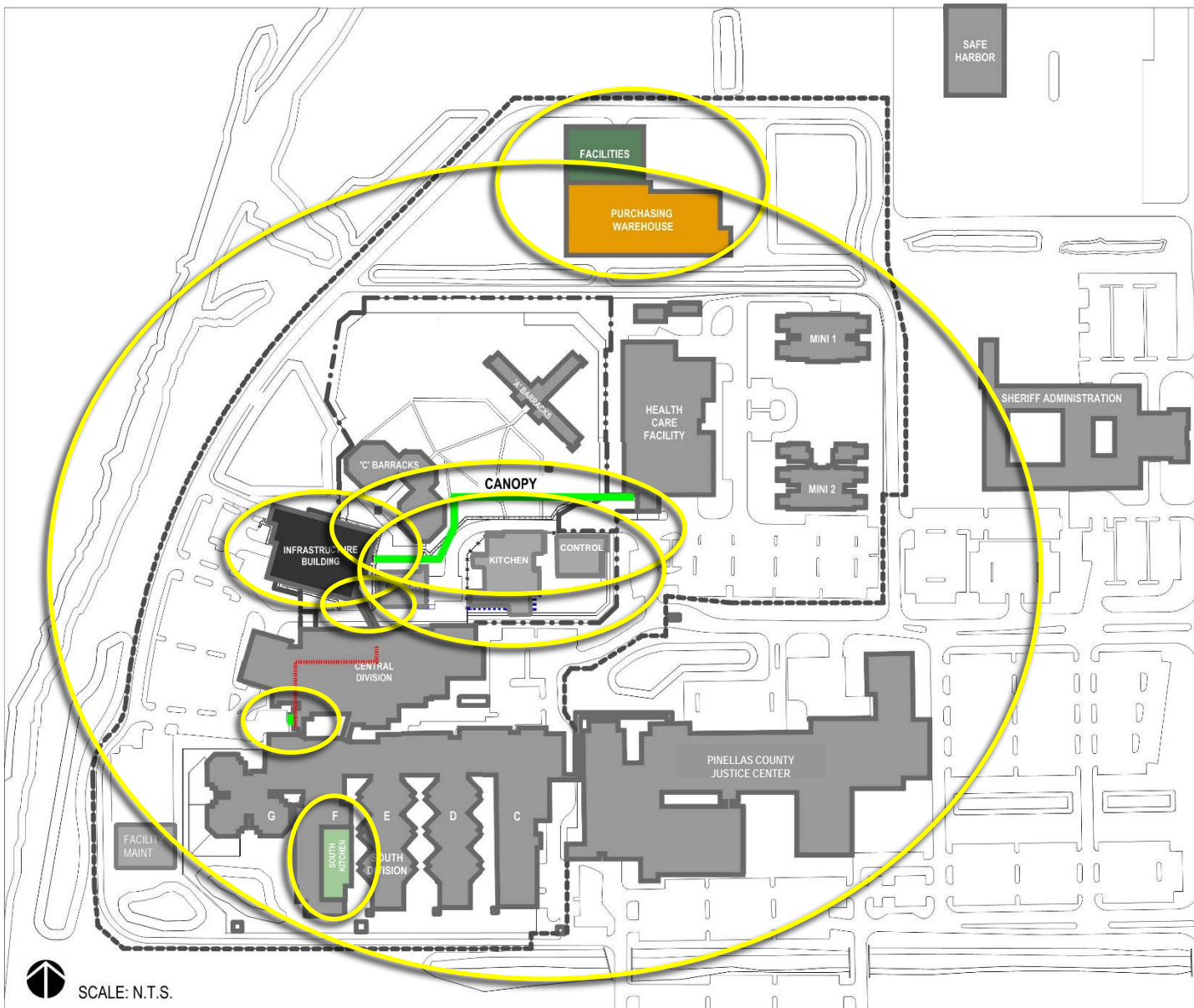
## Project Scope and Phasing



**Facility Maintenance  
/ Sheriff's Purchasing Warehouse**

**Infrastructure Building**

## Aerial View Looking SE



- Site Utilities and Security Upgrade
- New Infrastructure Building
- Second Floor Connection to Central Tower
- New Facilities Maintenance and Sheriff's Purchasing Warehouse
- Canopy Connection to Health Care
- New Freight Elevator and Staff Entry at Central Tower
- Renovation of South Kitchen
- Demolition of:
  - Main Control
  - North Kitchen
  - Laundry

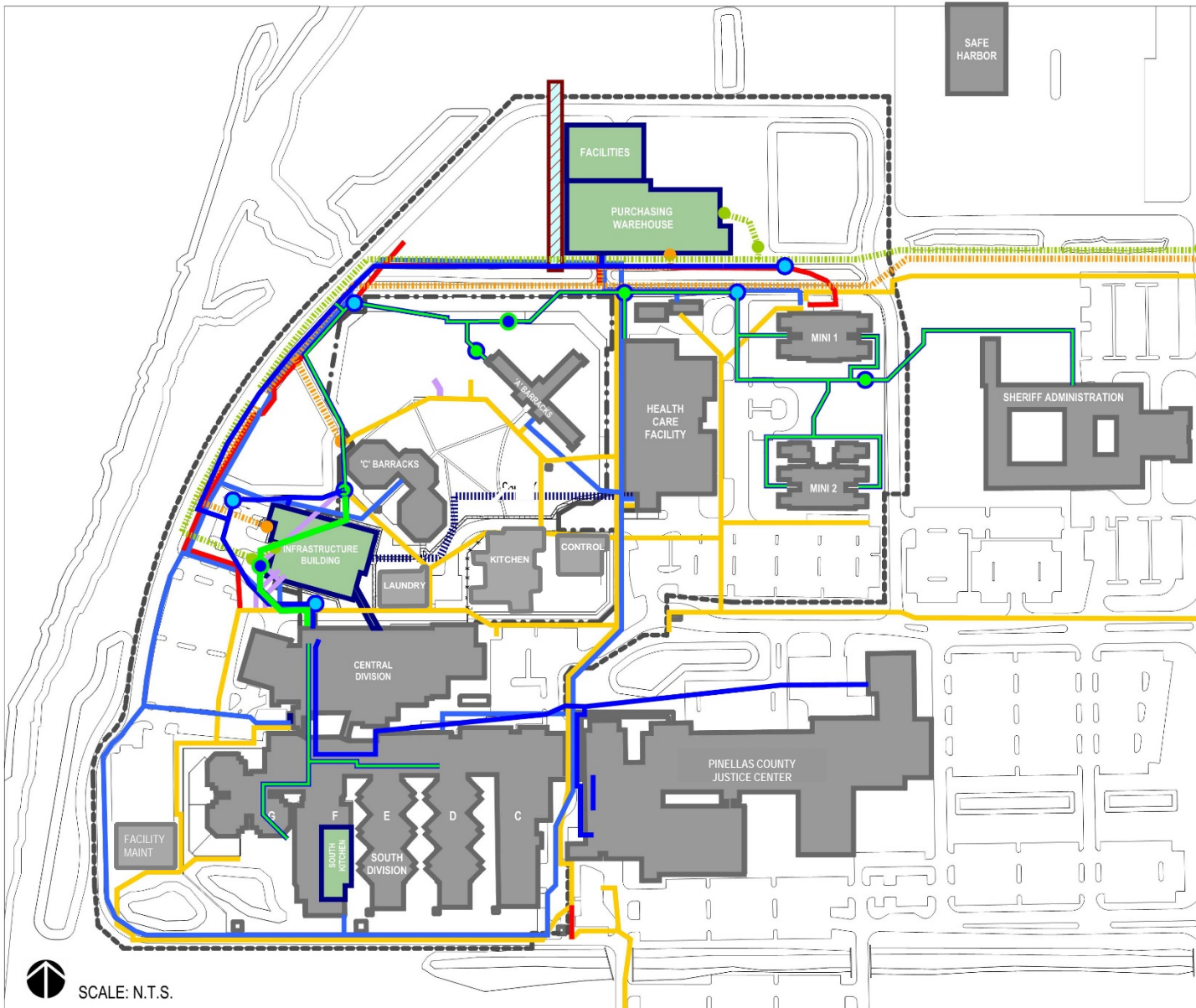
### Construction Phasing



# OVERVIEW



## Site Development



- LEGEND**
- NEW DOMESTIC WATER LOOP
  - NEW WATER LOOP FOR FIRE
  - NEW CHW LOOP
  - NEW GAS SERVICE
  - NEW ELECTRICAL SERVICE

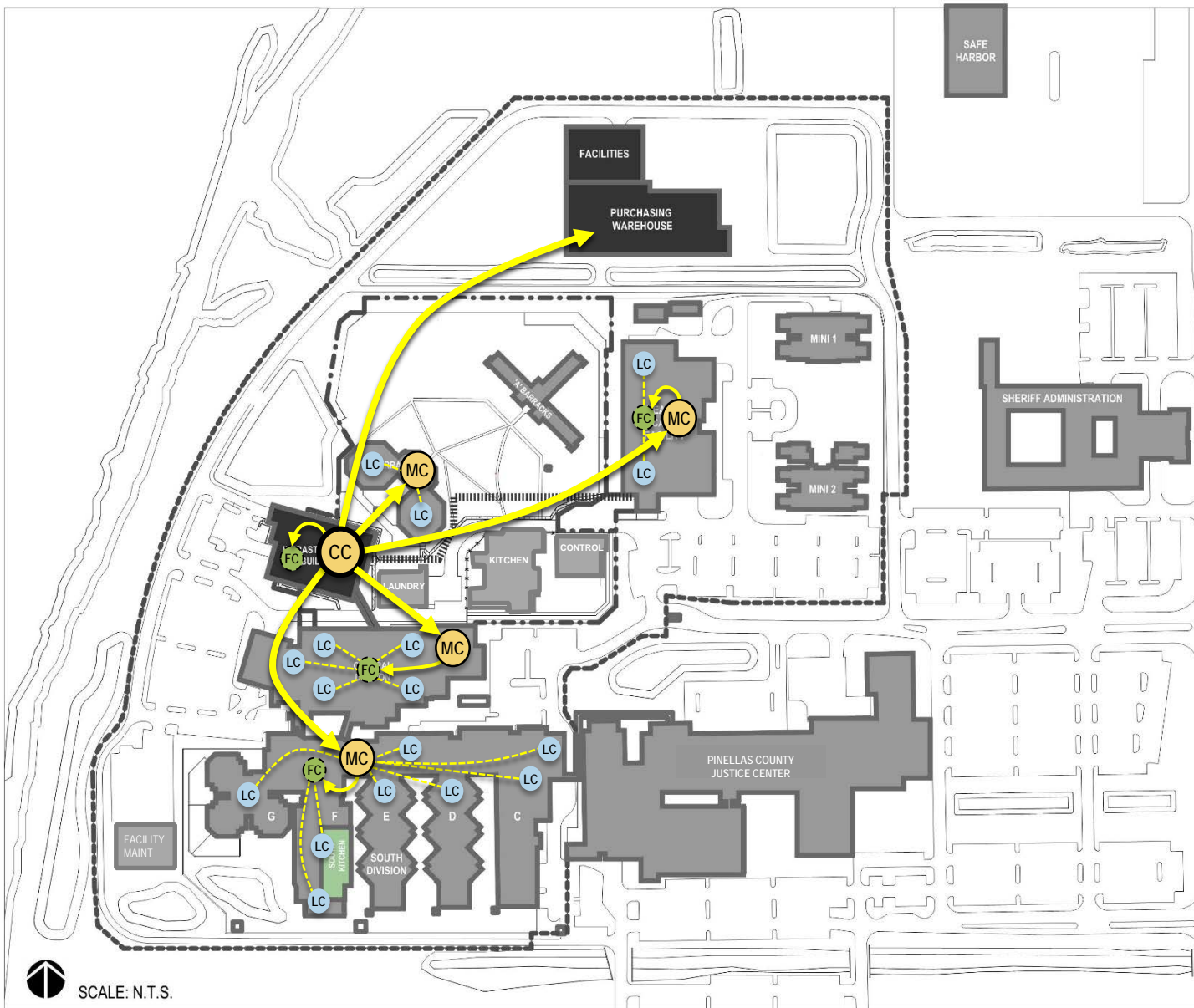
SCALE: N.T.S.

## Site Utilities

# RENOVATION

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## Campus Security and Control Room Upgrades



**LEGEND**

- CENTRAL CONTROL ———— (CC)
- MASTER / TOWER CONTROL ———— (MC)
- FLOOR CONTROL ———— (FC)
- LOCAL / SUB CONTROL - - - - - (LC)

SCALE: N.T.S.

**Proposed Control Room Hierarchy**



## Security Upgrades

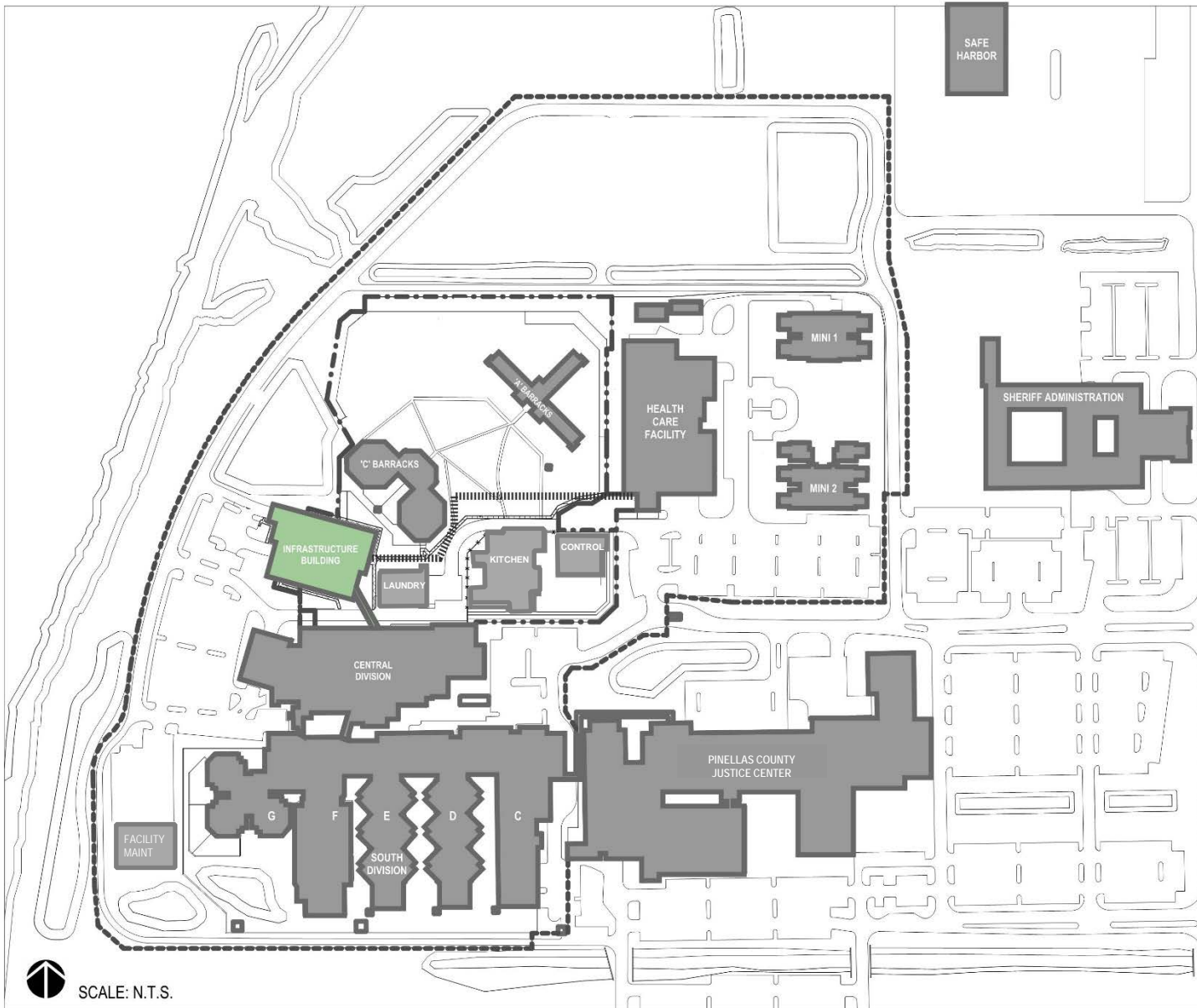
# Key Benefits – Campus Security and Control Room Upgrades

- *Enhances campus safety and security*
  - Standardizes security controls on the Jail Campus
  - Upgrades **CCTV** (1451 locations including 591 new cameras), **access controls** (1661 doors and 264 card readers), and **intercom communications** throughout campus
  - Switches from an analog to addressable digital system (networked system)
  - State-of-the-art touch screen operations
- *Improves efficiency*
  - Incorporates **365 utility control points** (lights/doors/water/TV) to improve efficiency
- *Resiliency and redundancy*
  - Provides an integrated campus wide security system controllable from a central complex control room
  - Non-proprietary systems and devices
- *Invests in future*
  - Upgrades division and local control room casework built around outmoded technology and in need of repair

# NEW STRUCTURES

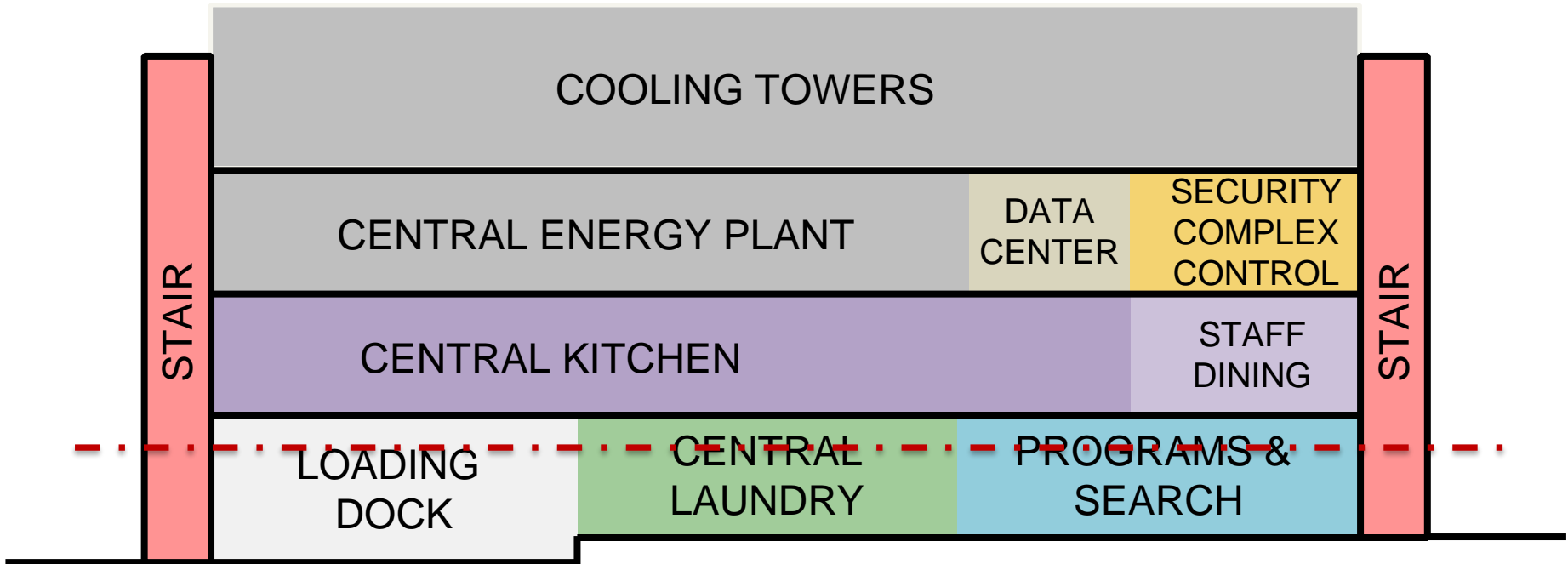


## Infrastructure Building



## Infrastructure Building



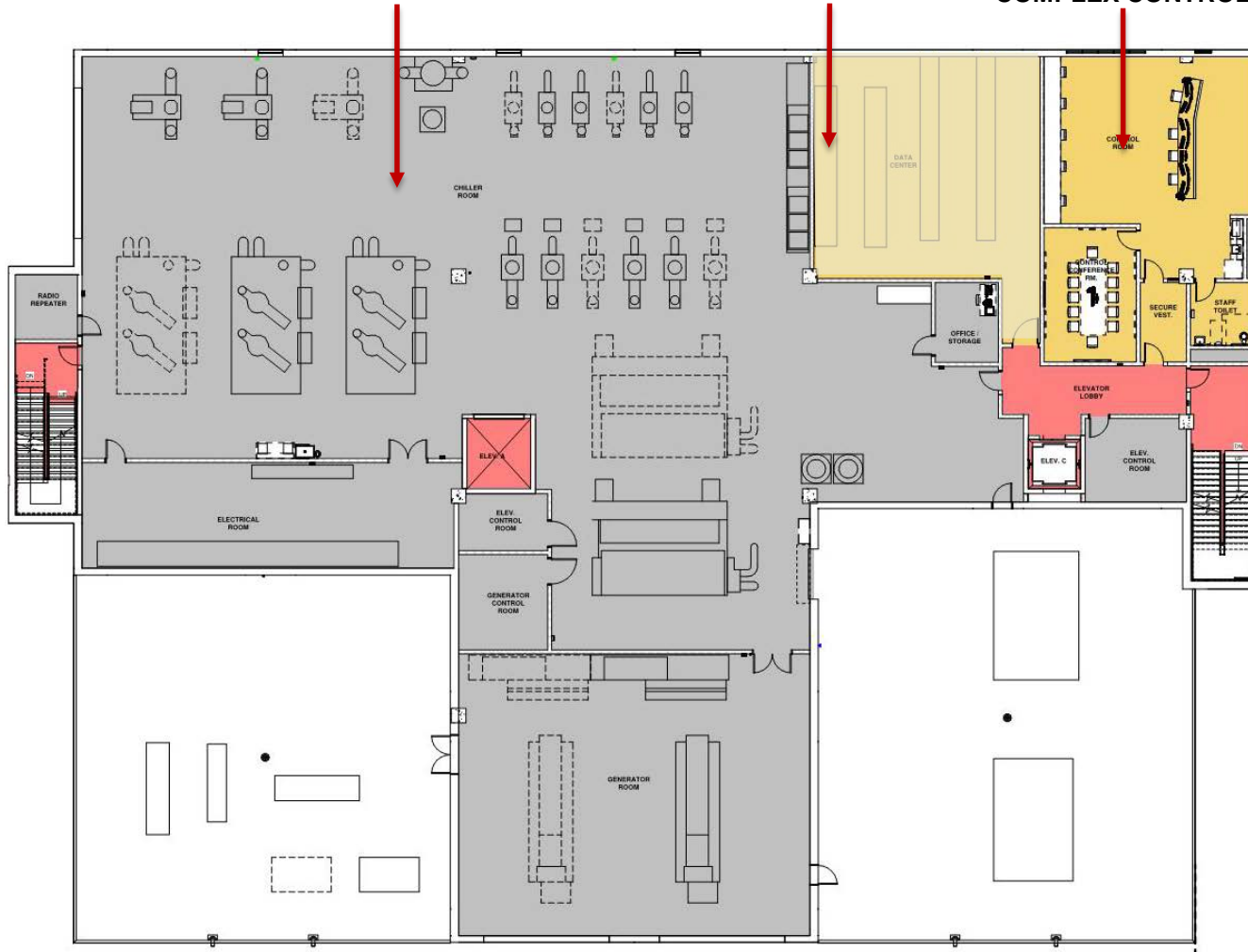


## Infrastructure Building – Program Stacking

**CENTRAL ENERGY PLANT**

**DATA CENTER**

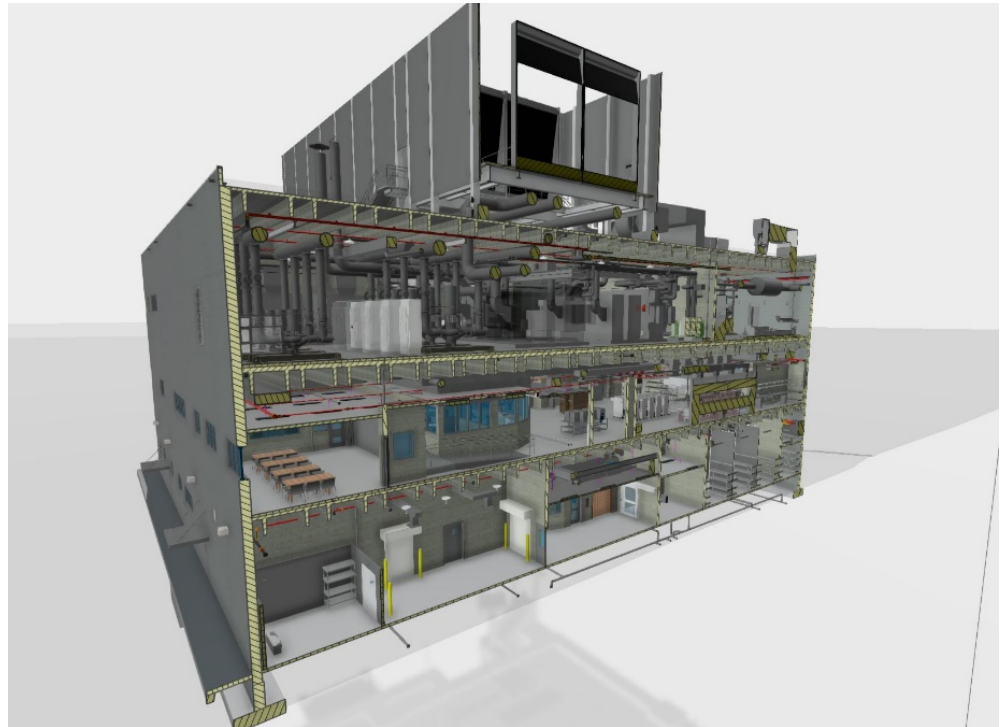
**SECURITY  
COMPLEX CONTROL**



## Infrastructure Building – Third Floor

# Infrastructure Building – Cogeneration Central Energy Plan (CEP)

- Primary power for Infrastructure Building and campus chilled water from natural gas generator, electrical grid is back-up
- Electric chillers powered by generator
- Absorption chiller utilizes generator waste heat from power generation to produce chilled water for cooling (19% of campus need is from reclaimed energy)
- Redundancy and resiliency
- Expansion accommodated

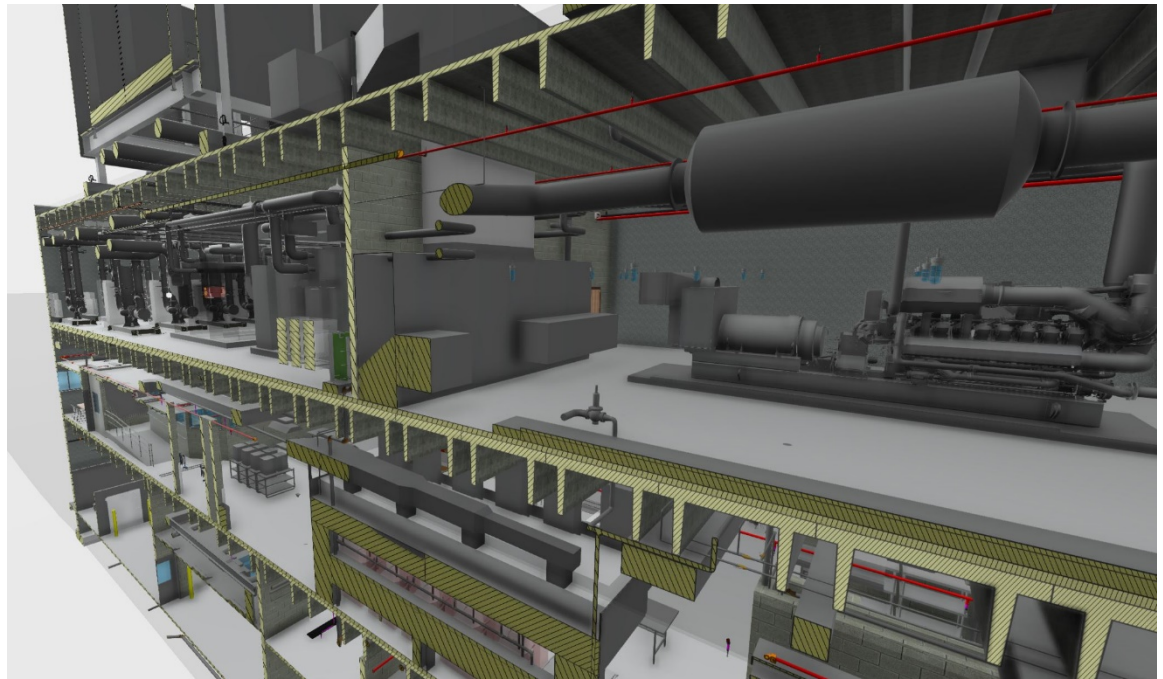


# Cogeneration

- **Chilled water loop** on campus upgraded and expanded to serve all buildings with chilled water, and replace aging chillers distributed throughout
  - Central Energy Plant (CEP) is sized to deliver the anticipated required peak capacity upon the completion of this project of 2500 tons. CEP is expandable to supply future anticipated peak capacity of 5000 tons.
  - Design modifications were made to increase CEP capacity to meet demand of all campus buildings above and beyond Design Criteria requirement of just New Buildings, CJC, and State's Attorney
- **Expansion** space available for additional generator, absorption chiller, electric chiller, and cooling tower to provide primary power and chilled water to future campus buildings
- **Redundancy** built-in day one and in future expansion for chillers and generator

## Life Cycle Cost Analysis

- Comparison between cogeneration system, non-cogeneration conventional chiller plant system, and ice storage system demonstrated a \$7.9 million net present value savings with the final cogeneration system over 25 year life cycle.
- Analysis looked at initial equipment costs and all maintenance and replacement costs over 25 year life cycle.



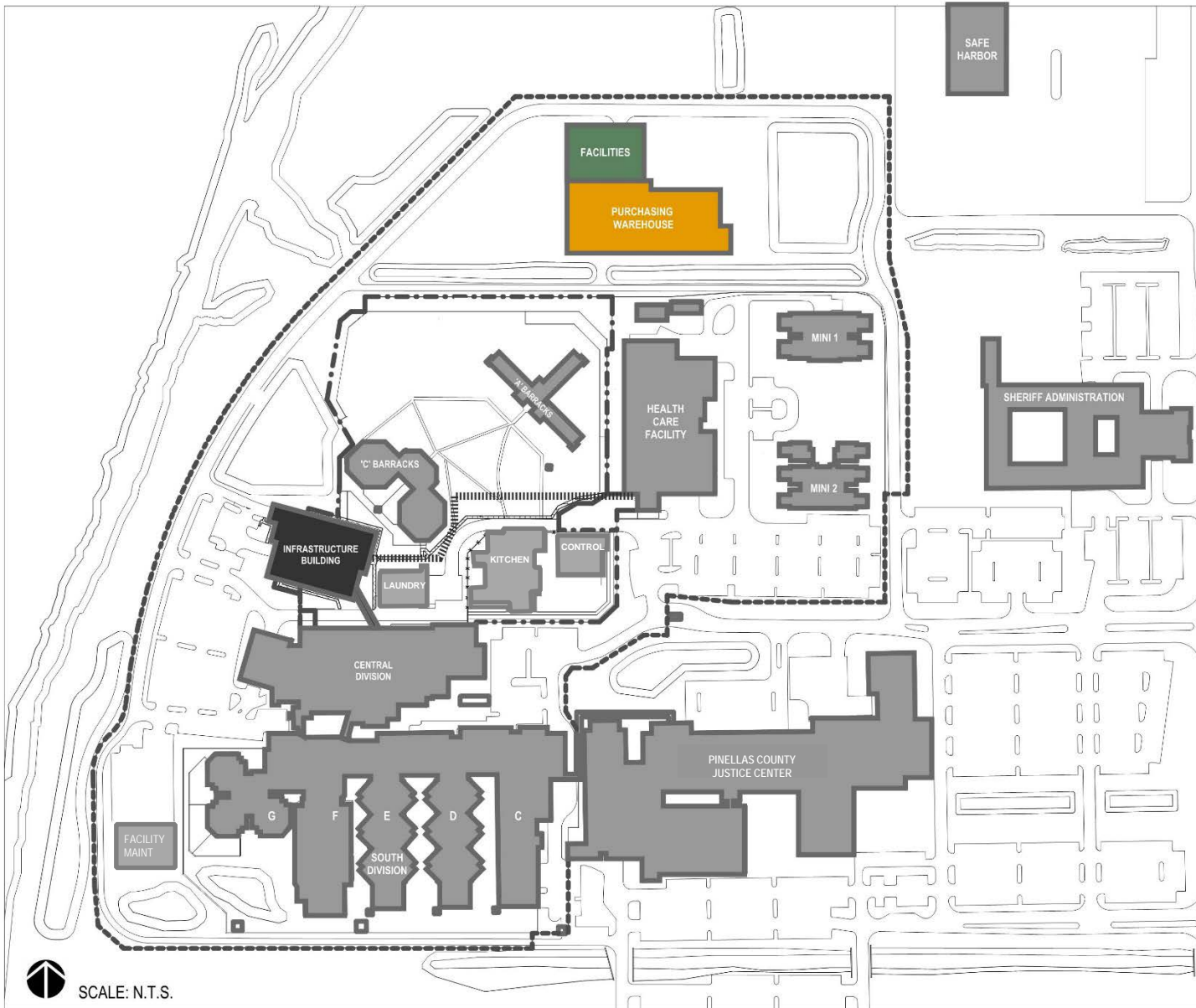
# Key Benefits – Infrastructure Building

- *Resiliency*
  - Built to Miami-Dade wind standards with critical functions on 2<sup>nd</sup> and 3<sup>rd</sup> floor
- *Improves campus safety and security*
  - Centralized campus security operations center (Security Complex Control)
- *Operational efficiency* - Improved food service and laundry efficiency and capacity
  - Larger kitchen with capacity to serve entire campus
  - Safer more efficient delivery of food carts to healthcare and central tower
  - Improved access to deliveries without bringing trucks into secure perimeter
  - Efficient layout of equipment
  - Larger laundry output capacity
  - Improved space for inmate programs and processing inmate workers
- *Energy and resource efficiency*
  - Laundry and kitchen water and energy use reductions
  - Central Energy Plant - cogeneration

# NEW STRUCTURES

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Facility Maintenance /  
Sheriff's Purchasing Warehouse



## New Facility Maintenance / Sheriff's Purchasing Warehouse

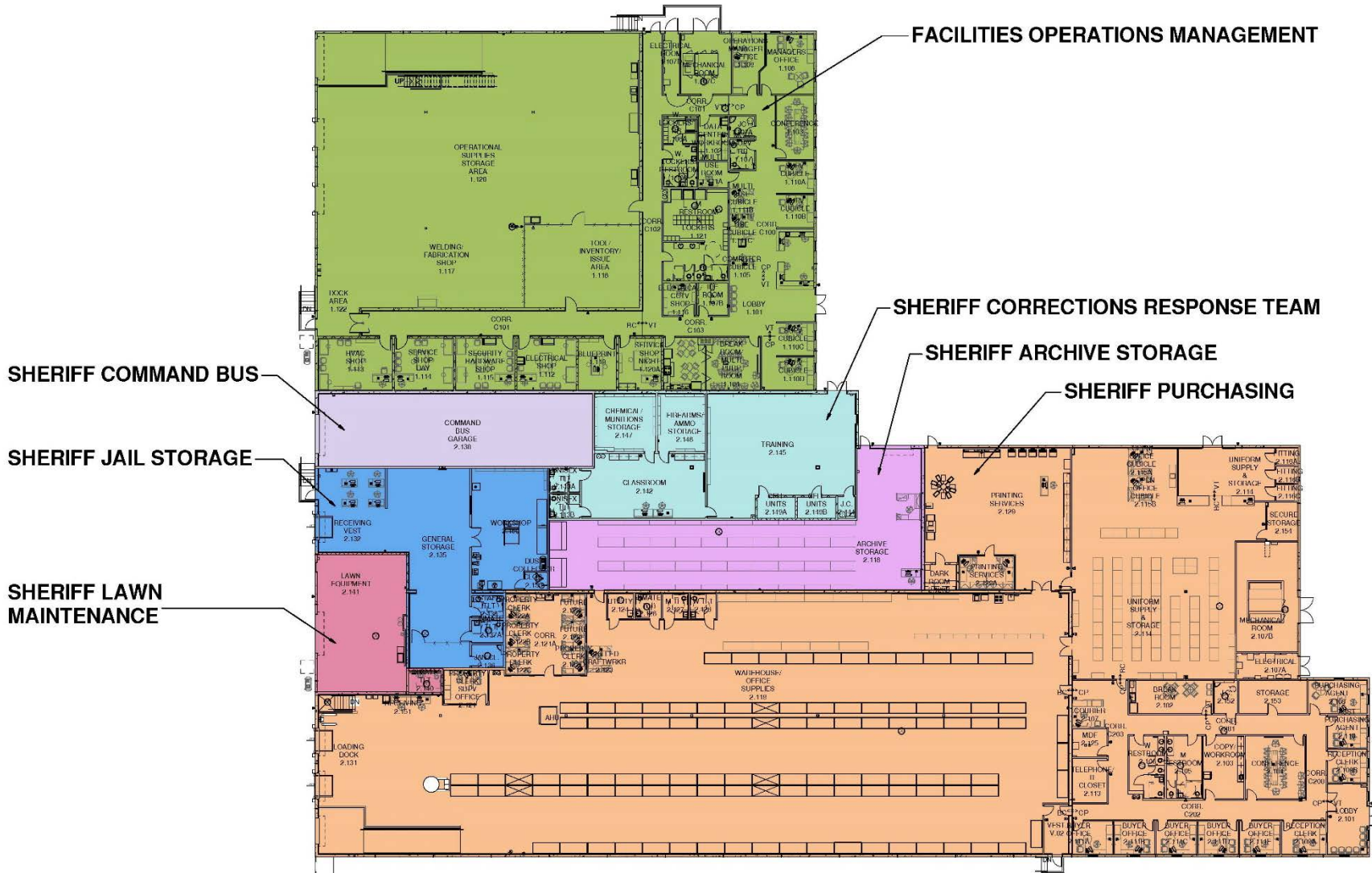


## Facility Maintenance / Sheriff's Purchasing Warehouse NE Corner

Pinellas County Upgrade Jail Campus Infrastructure - RFP: 134-0308-NC

8/4/2016





## Facility Maintenance / Sheriff's Purchasing Warehouse Building – Departmental Planning

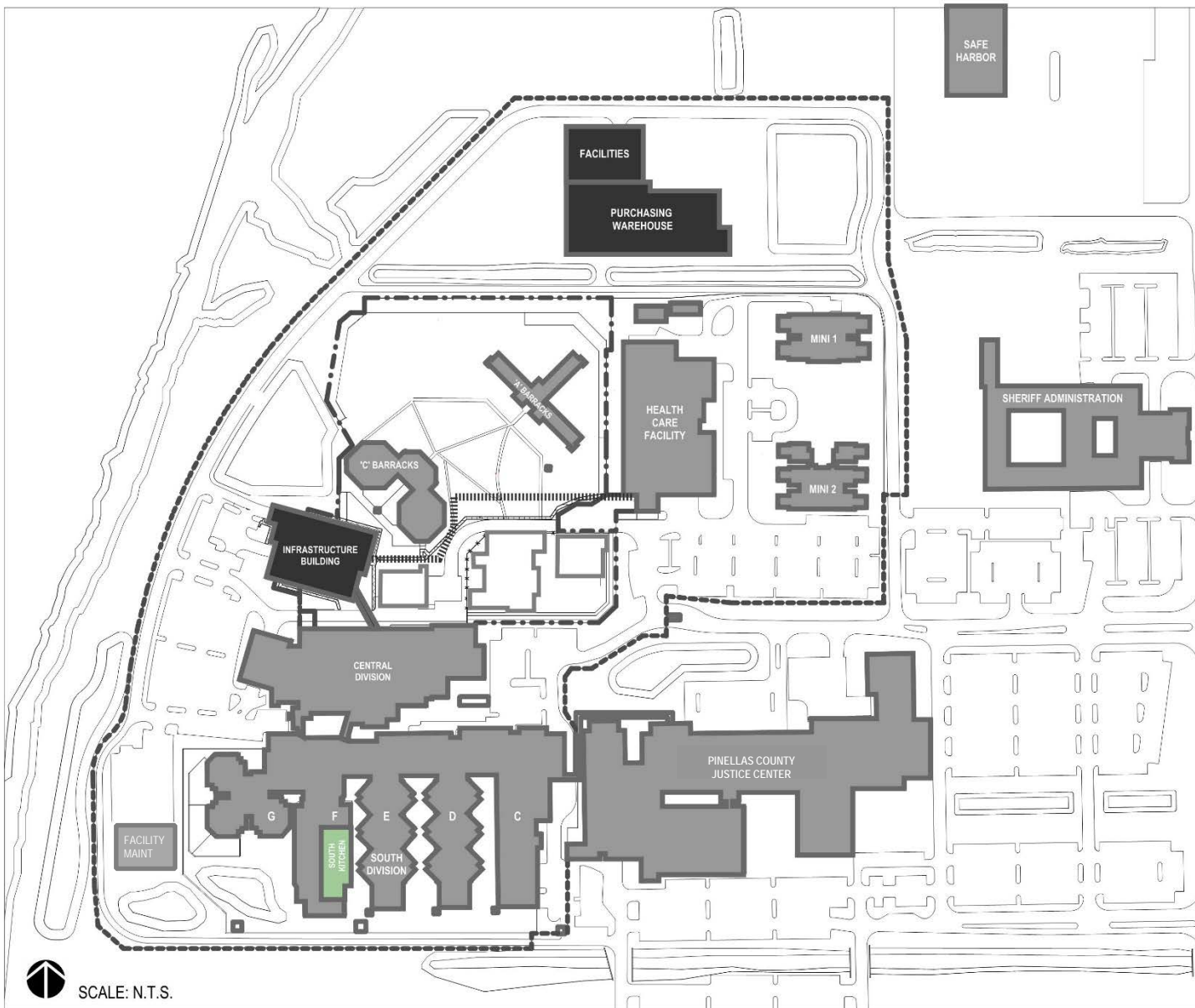
# Key Benefits – Facility Maintenance / Sheriff's Purchasing Warehouse

- *Invests in future*
  - 2013 Property Assessment recommended demolition and replacement of existing Facilities Maintenance building
- *Consolidated support services*
  - Eliminates the tenant lease for the current Sheriff's Office Purchasing
  - Consolidation of Facilities Maintenance, Sheriff's Office Purchasing, and Jail Warehouse in one location and structure:
    - Eliminates the need to provide service at multiple sites
    - Reduces quantity of utility connections
- *Improves campus safety and security*
  - Centralized/shared warehouse functions on site improves circulation, access, loading, and staff parking

# RENOVATION



## South Kitchen



## South Kitchen Renovation



## Existing conditions images



## South Kitchen – Renovation

# Key Benefits – South Kitchen

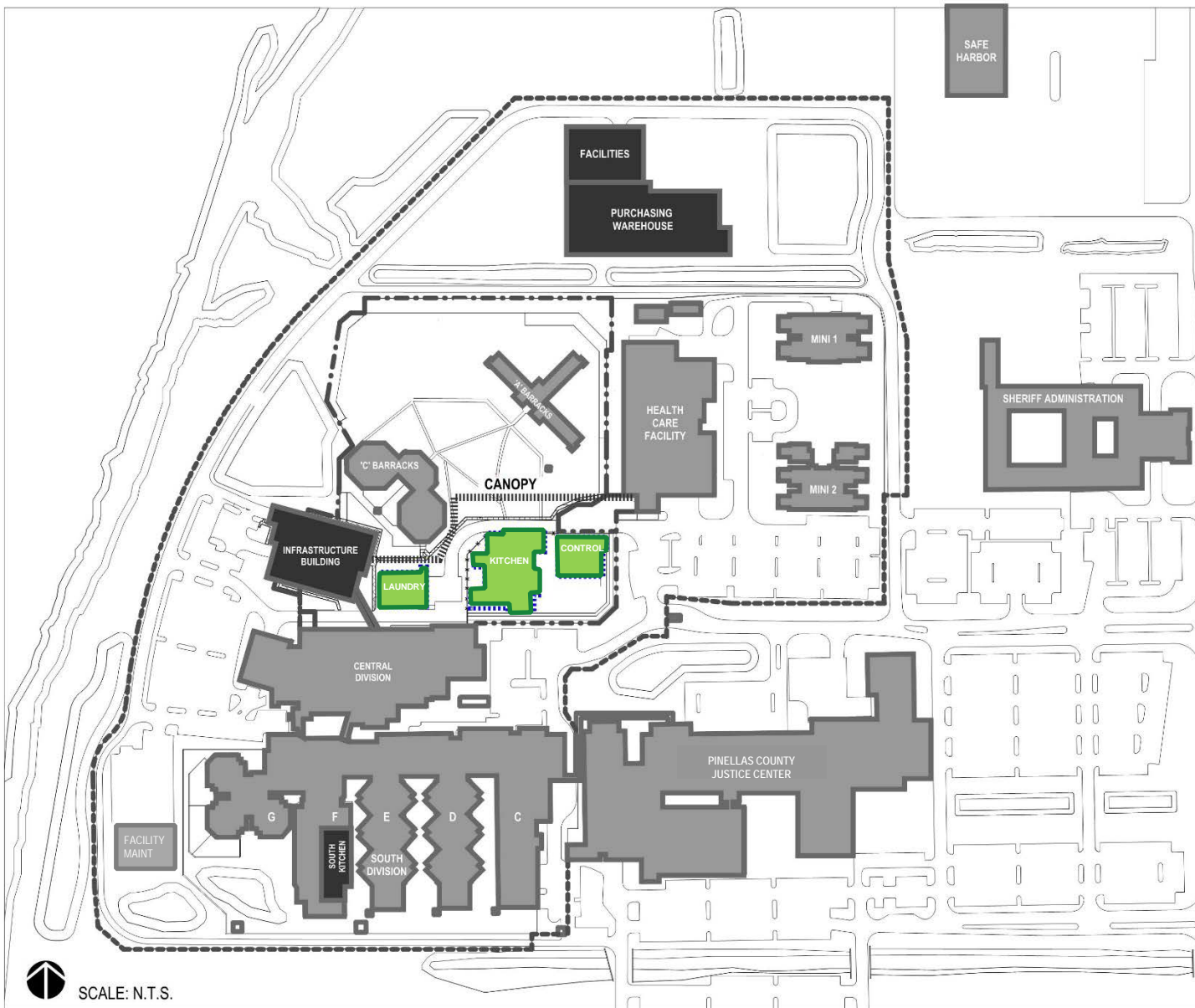
- *Investment in future* and *improved efficiency*
  - Equipment upgrade and replacement (30 years old)
  - Electrical service upgrade
  - Upgrade of mechanical and plumbing systems to solve ongoing maintenance issues
  - New floor and ceiling (increase ceiling height)
- *Improved safety and security*
  - Improved layout sightlines
- *Resiliency*
  - Increased food storage capacity

# DEMOLITION



Main Control / Kitchen / Laundry



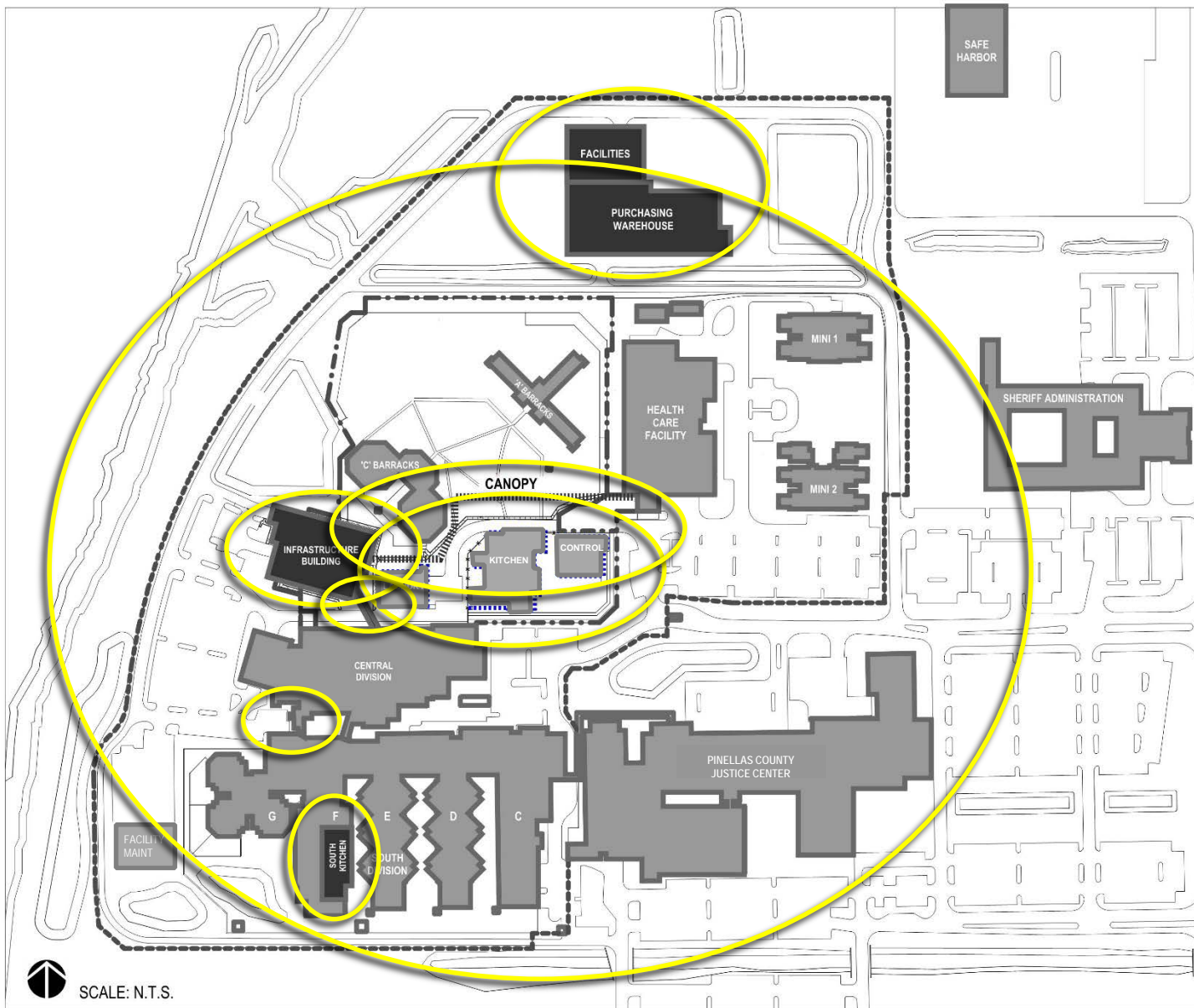


## Demolition

# DESIGN CONSIDERATIONS AND CONSTRUCTION PHASING



## Overview



Site Utilities and Security Upgrade

New Infrastructure Building

Second Floor Connection to Central Tower

New Facilities Maintenance and Sheriff's Purchasing Warehouse

Canopy Connection to Health Care

New Freight Elevator and Staff Entry at Central Tower

Renovation of South Kitchen

Demolition of:  
-Main Control  
-North Kitchen  
-Laundry

## Construction Phasing

# Sustainability and Resiliency Features

## *Enhanced flood protection*

- New buildings first floor above category 2 estimated storm surge
- Kitchen, central energy plant and critical functions on 2<sup>nd</sup> and 3<sup>rd</sup> floors, (above category 5 estimated storm surge)
- Uninterrupted food service, chilled water, and centralized campus security in worst case weather emergencies

## *Enhanced wind resistance*

- Infrastructure Building designed to higher Miami Dade standards
- Facilities Maintenance / Sheriff's Purchasing designed as critical structures

## *Water efficiency*

- Tunnel washer higher efficiency reuse of water and increased efficiency in new kitchen equipment

## *Energy efficiency and renewable sources*

- Solar site lighting utilized for parking lot lighting
- Cogeneration – reduced energy costs and reclaimed waste energy from generators
- Natural gas generators reduce utility cost
- Replacement of existing less efficient chillers

# Global Project Benefits

*Enhanced campus and public safety*

*Consolidated support services* (food service, laundry, security, warehouse)

*Operational efficiencies* – staffing and utilities

- Centralized laundry, better flow, less water more energy efficient
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*Investment in future*

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*Increased resiliency* – food service, chilled water, power, security

# PROJECT SCHEDULE



Complete Documents and Construct

	2016					2017												2018												2019		
	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	
Mobilization		Mobilization																														
Site Utilities			Site Utilities																													
Covered Walkway								Covered Walkway																								
Freight Elevator									Freight Elevator																							
Security Upgrades										Security Upgrades																						
Infrastructure Building																																
Warehouse Building																																
Substantial Completion Construction A																																
Demolition																																
Kitchen Renovations																																
Substantial Completion Construction B																																

## Schedule

# PROJECT COST



## Construction Cost



**PINELLAS COUNTY INFRASTRUCTURE PROJECT  
 CLEARWATER , FLORIDA**

***Phase Two***

Site Work	7,338,196
New Construction	62,333,124
South Kitchen Renovations	2,584,922
Security Upgrades	10,330,922
Phase II Escort Service	975,000
Contractor Contingency	1,000,000
County Contingency	2,937,836

**PHASE TWO TOTAL 87,500,000**

**Construction Cost**

# THANK YOU

